

2009 IRC--Section R 313 Automatic Fire Sprinkler Systems
Prepared by Chuck Day--Adair Homes 9-23-09

Cost Calculation based on case studies of actual homes that due to present fire code requirements had fire suppression systems installed

1. 4210 sq ft custom 2 story home on private well

System cost with pump & water storage tank	12517.76
Builder profit, overhead, const. interest, etc.	3755.32
Subtotal	16273.08
8% sales tax	1301.85
Cost to homeowner	17574.93
Cost per sq ft--\$4.18	

2. 2080 sq ft basic 2 story home on public system

Permit costs	64.16
System cost of designing	4223.00
Builder profit, overhead, const int, etc	1286.14
Subtotal	5573.30
8% sales tax	445.86
cost to homeowner	6019.16
Cost per sq ft--\$2.89	

Cost est from certified 13D system installer (plumber) NFPA 13D REHAU branded Pex based system

Base cost 2.00 to 4.00 sq ft depending on service PSI & gallons per minute

Permits & plan review--\$200-500 per home

Engineering & calculations--\$500-2000 per home

Indirect pump & storage tank due to insufficient water supply \$2500-4500

Range of Effect on 2000 sq ft home:

1. Minimum cost per estimated numbers on public system

2000x2.00 per ft	4000
Permits & plan review	200
Engineering & calculations	500
No storage tank	0
Builder profit, overhead, const int, etc	1410
Subtotal	6110
8% sales tax	488.8
Total cost to homeowner	6598.8

Cost per sq ft--\$3.30

This does not include further additional cost associated with an upsized meter or separate metering

2. Minimum cost per estimated numbers on private water system

2000x2.00 per ft	4000
Permits & plan review	200
Engineering & calculations	500
Storage tank and pump	2500
Builder profit, overhead, const int, etc	2160
Subtotal	9360
8% sales tax	748.8
Total cost to homeowner	10108.8

Cost per sq ft--\$5.05

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3. Maximum cost per estimated number on public system

2000x4.00 per ft=	8000
Permits & plan review	500
Engineering & calculations	2000
No storage tank	0
Builder profit, overhead, const int, etc	3150
Subtotal	13650
8% sales tax	1092
Total cost to homeowner	14742

This does not include further additional cost associated with an upsized meter or separate metering

Cost per sq ft--\$7.37

4. Maximum cost per estimated number on private water system

2000x4.00 per ft	8000
Permits & plan review	500
Engineering & calculations	2000
Storage tank and pump	4500
Builder profit, overhead, const int, etc	4500
Subtotal	19500
8% sales tax	1560
Total cost to homeowner	21060

Cost per sq ft--\$10.53

These cost estimates would be a higher or lower total based on other square footage assumptions for a home--but that would not alter the final cost per sq ft

For example:

Home Size	Min on Public	Min on Private	Max on Public	Max on Private
1200 sq ft	\$3,960	\$6,060	\$8,844	\$12,636
4500 sq ft	\$14,850	\$22,725	\$33,165	\$47,385

These estimates are reasonable--particularly on the maximum cost for a smaller home as there is no economy of scale to be factored in

Example of effect on a basic Adair Home Plan

1192 sq ft 1 story house

Current price 67,649

Price with 8% sales tax \$73,060.92

Min on Public	Min on Private	Max on Public	Max on Private
73060.92	73060.92	73060.92	73060.92
3933.6	6019.6	8785.04	12351.76
76994.52	79080.42	81845.86	85612.68
5.4% inc	8.2% inc	12% inc	17% inc